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TRAINING ON THE STRUCTURAL-FUNCTIONAL RELATIONSHIPS OF SPELLING-TO-SOUND CORRESPONDENCES IN THE MOD 2 READING PROGRAM

John Koehler, Jr.

ABSTRACT

The linear sequencing of correspondence rules in the Mod 2 reading programs creates problems for rule instruction and the efficient application of the rules during word decoding. Training forms are suggested for overriding possible interference brought on by isolating the alternative pronunciations of graphemes. Learning to classify major rule dimensions and to scan the classification structure efficiently are proposed to improve retrieval of rule information during word decoding.

TRAINING ON THE STRUCTURAL-FUNCTIONAL RELATIONSHIPS OF SPELLING-TO-SOUND
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The criteria used in sequencing the correspondence rules for the Mod 2 reading programs (cf, Berdiansky et al., 1971) were largely concerned with productivity and rule complexity. Productivity, defined in terms of number and usage frequency of words in the lexicon containing the rule, received primary consideration in preparing the sequence in order that words from the beginning reader's vocabulary would be optimally affected by the instruction. Some of the productive rules, however, were found to be too complex for inclusion in initial reading instruction and other simpler, but less productive rules shared structural similarities with productive rules and thus were sequenced with the latter. The rules for graphemes having alternate pronunciations, which affected all of the vowels and a handful of consonants, were sequenced in a manner that kept the ruler of these pronunciations segregated from each other: short vowel rules and the /k/ and /g/ sounds of c and g are placed in the kindergarten program, while the long and secondary vowels and other pronunciations for c and g are in the first grade reading program. Within the sequence, the rules were blocked according to structural-functional relations holding between rules that were considered useful to the development of generalized word decoding strategies, e.g., the VCe vowel rules.

This note addresses the question of how classification learning may be used to improve the beginning reader's comprehension and use of the relationships among correspondence rules. The note also takes

up the problem of teaching alternate pronunciations in the Mod 2 reading program sequence. Because of limited resources and data base at this time, each aspect of complex correspondence rule instruction is examined only in terms of instruction that will be supportive of other reading instruction components.

As Marsh (1969) has noted, an important conceptual skill of knowing and using correspondence rules is the concept of class inclusion. The correspondence rules form a system whose elements can be grouped into classes and the classes arranged hierarchically. That is, the rules can be divided into vowels and consonants and then further divided into subclasses reflecting the functional commonalities of the vowel and consonant rules, e.g., long and short vowel rules. Marsh also notes that many of these classes may be formed, at least from the learner's point of view, on the basis of the exclusion principle. This is easily accomplished in the case of vowels and consonants since the small set of vowels can be learned quickly by rote and the larger set of consonants retrieved by negation or exclusion with the use of knowledge of the alphabet. A similar strategy may be applied to many subclasses of vowels and consonants, e.g., primary vs. secondary vowels. Marsh goes on to state that the development of a classification scheme for the correspondence rules should have considerable utility to the word decoding process. A hierarchial organization of the rules can provide the beginning reader with an efficient processing strategy because the class label at a specified level in the tree structure will serve as cue to generate the labels and content of the next lower mode. (This assumes

that children can treat rules with similar characteristics as subsumed under a more general rule.) In consequence, the memory retrieval requirements during decoding should be considerably reduced in comparison to a sequential or nonbranching storage of correspondence rules.

In view of these advantages, it is proposed that explicit vowel identification training be given after the short vowel pronunciations have been covered in the Mod 2 Kindergarten Reading Program. Many of the important rule generalizations pertain to the vowel class and since its size is small, it should be easily learned by most beginning readers. This instruction can be referenced to the following outcomes:

- (1) locating vowel letters in lists of letters and words, and
- (2) producing vowel letter names or printing the letters when given the statement, "What letters are called vowels?" In general, the instruction should attempt to achieve effective control of the child's responses to the word vowel so that any statement referring to vowels, e.g., What is the vowel at the end of a word?, is immediately interpreted in terms of the content in the vowel class.

Following or concurrent with vowel identification training, children could also receive training on identifying the remaining letters as consonants. For example, this training might progress from simply recognizing letters which are not vowels to selecting and producing letters that are members of the consonant class. Instruction in classifying the major pronunciation forms of vowels and consonants may also be developed, but it would not be as simple as teaching vowel

and consonant identification. In the case of the consonants because most have a single frequent pronunciation, it would only be a matter of learning to recognize a small set of letters (c, g, and s) that have productive alternate pronunciations. For the vowels, on the other hand, a simple dichotomization of the pronunciation patterns is out of the question since each primary vowel has more than two productive pronunciations and several environments associated with each pronunciation. Nevertheless, children probably can be taught to analyze the letter string following the vowel grapheme to determine whether it corresponds to one of the frequently occurring environments associated with the long and short vowel pronunciations, i.e., the Ce for the long and the C or CC for the short pronunciation.¹ Other letter patterns following the vowel would then signal that a more specialized rule applies.

In conjunction with establishing the above categories, it will be necessary to develop the reader's skills to systematically and efficiently move through the hierarchical structure relating the categories. Practice exercises (and also criterion exercises) can be devised along the lines outlined by Marsh (1969) as a means to develop orderly procedures for use in identifying the pronunciation of graphemes in unfamiliar words. For example, a routine for querying the child might follow these steps:

¹These patterns are overgeneralized: they are not applicable to unstressed syllables, re, lC. However, it may be possible to emphasize during training that the Ce, C, and CC patterns indicate long and short vowel pronunciations for most short words. Training schemes for decoding multisyllable words have been previously described by Cronnell (1970).

1. Present a word with an underlined letter(s), e.g., PINE.
2. Query about the grapheme type (vowel or consonant).
3. (a) If a consonant, query about the consonants that have more than one pronunciation, i.e., have the child produce the list of variant consonants.

(b) If a vowel, query whether the letters after the vowel fit a standard pattern, i.e., Ce, C, or CC.
4. (a) If a consonant, query whether the consonant belongs to the variant set. (From this cue, the child then retrieves the appropriate pronunciation.)

(b) If a vowel having a standard pattern, query whether the pronunciation is like the letter name or like the other known one (from this cue, the child then retrieves the appropriate pronunciation). If a vowel with a nonstandard pattern, ask for a description of the rule applies (the description then serves as a cue to retrieve the appropriate pronunciation).

Training on the routine just described can be started after Unit 4 in the first grade reading program since most of the rules covered in the querying sequence are taught in the kindergarten program and the first three units of the first grade program. It should be recognized, however, that while the proposed strategy gives the reader an efficient method for retrieving correspondence rule information during word decoding, it requires fairly complex conceptual and processing skills which first grade children may not possess. Notwithstanding, it would seem that more effective word decoding can result from such strategies,

thus extensive rule classification training and development may be necessary if decoding performance is to be raised above existing levels.

According to transfer theory, separation of the alternative pronunciations for graphemes in the instructional sequence should promote the development of response interference. This interference would primarily affect the first grade reading program since the alternative pronunciations to those covered in kindergarten are introduced at that time.²

Reduction of this interference is largely a matter of having each pronunciation conditioned to the word environment cues that serve to distinguish the alternative ways of pronouncing the grapheme. Thus, when a different pronunciation for the grapheme is to be taught, the beginning reader should be exposed to contrastive word pairs, e.g., rat vs. rate, where both pronunciations can be discriminated and associated with their respective environmental cues. This training approach is also supported by the limited empirical work on teaching alternate pronunciations (Levin & Watson, 1963; Williams, 1968).

Contrastive word training should begin in Unit 3 of the first grade reading program since the long vowel rules are introduced at this point. Wherever possible, a short-vowel word of the kindergarten

²The long and short pronunciation of the e grapheme is given the kindergarten program. The long pronunciation also makes its appearance with the ee grapheme in this program. Special instructional effort may be needed to ensure that the reader clearly distinguishes the various contexts involving the alternate pronunciations of the e grapheme.

program should be paired with its long-vowel counterpart, e.g., cut vs. cute. This would allow the child to contrast a highly-visible known word with a new one, which should facilitate discrimination and reduce interference during the acquisition phase of the new vowel rule. It would also be appropriate to have the child associate the letter name with the long-vowel sound (cf, Marsh, 1969) since the former shares features with the latter and therefore can aid in the discrimination and production of the long-vowel sound.

Other devices such as color coding or underlining letter(s) could be employed to enhance the cues associated with each pronunciation, although the use of extrinsic markers tends to create problems for transfer to the same or similar words when the markers are removed.

It is apparent from the preceding remarks that only a skeleton of a program is given here. If rule classification learning and contrasting alternative pronunciations via word pairs are considered to be important tasks of first grade reading, it should be possible to develop a series of lessons elaborating the relevant program content as exemplified with the procedures and materials given in this paper.

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